EXHIBIT A

MOTOROLA

Security Classification
Motorola Confidential Proprietary
(When Completed)

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MOTOROLA PATENT COMMITTEE

PAGING PRODUCTS GROUP

PATENT DISCLOSURE

Rev. O 5/31/95 SUBMITTED PURSUANT TO EMPLOYEE AGREEMENT

INTELLECTUAL PROPERTY DEPT USE ONLY

DISCLOSURE # PT03283K

DATE 5/12/99

PATENT COMMITTEE ACTION

THIS SECTION TO BE COMPLETED BY INVENTOR(S)

1. Name of invention: (Limit to ten words.)
Antenna for a Wireless Data Tablet

2. Documentation Date: (Attach log sheets, drawings, etc., to support the earliest date you documented your idea.)
13 January 1999

3. Whom did you first tell about your invention? Name: **Kai Siwiak** Date: **12/98**

4. Is this disclosure being submitted as a Design disclosure? Yes ___ No X
If Yes, please attach a completed PPG DESIGN DISCLOSURE FORM along with this disclosure.

5. What problem is solved by this invention? (Attach additional sheets if necessary.)
See attached sheets.

6. What is the closest known technology? (Attach additional sheets if necessary.)
Diversity antenna schemes.

7. What is this invention? [AN ABSTRACT IS REQUIRED BELOW] Use additional sheets if necessary to describe how it resolves the problems in a new or novel way not accomplished by the closest known technology. NOTE: If your invention doesn't accomplish something new, or in a novel way, then it is likely NOT patentable.

The invention is a switchable antenna system for a wireless data tablet. Four radiating elements are placed around the perimeter of the tablet, internally, but only the one at the top of the display is connected to the wireless transceiver at any given time. As the user changes tablet orientation (e.g., by switching from portrait to landscape display, as one might when switching from electronic book reading to web browsing), the antenna system automatically switches radiators so that the active element is always at the top of the display. In this way, the radiating element is least likely to be covered by the hands, and likely to be away from the body, for best radiating efficiency. See attached sheets.

THIS SECTION TO BE COMPLETED BY AN ENGINEERING OR PRODUCT MANAGER (or higher) ONLY

1. Product to be used in/on: (If a process, name the first product the process was/is to be used on.)
INVENTION HAS NOT BEEN ASSIGNED TO A PRODUCT YET

2. Has/Is/Will this product been/being/be offered for sale? Have products incorporating this invention been described, quoted, or demonstrated to a customer? Have orders been accepted for the product? Explain the circumstances.)
NO

3. If item 2 is yes, when was/will the first offer for sale of a product incorporating this invention (be) made?
Date:

4. When is the estimated ship date? N/A

5. When was/will the first disclosure outside of Motorola (be) made? N/A

6. How will the disclosure be made (state title and date of publication, if any) and to whom?
ANNOUNCEMENT FOR SALE WHEN APPROPRIATE

7. Was a non-disclosure agreement signed? Yes ___ Date: _____ No ___

8. Engineering or Product Manager's Name (Type): Chris Long Phone: 3544

I attest to the accuracy of the above information.

Signature of Engineering or Product Manager (or higher): [signature] Date: 4/23/99

(PRIMARY)

INVENTOR: (LEGAL NAMES)	LAST (SURNAME)	FIRST	MIDDLE	SOCIAL SECURITY	IMMEDIATE SUPVR.
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USA	EU627	x3830	2-way 7393830	FL19	90	1	Permanent

INVENTOR: (LEGAL NAMES)	LAST (SURNAME)	FIRST	MIDDLE	SOCIAL SECURITY	IMMEDIATE SUPVR.

HOME ADDRESS:	STREET	CITY	STATE	ZIP	E-MAIL ID

CITIZENSHIP (I.E. U.S., GERMANY, ETC.)	DEPT. NO.	OFC. PHONE	PAGER	LOC. CODE	MAIL STOP	SHIFT	EMPLOYEE STATUS (PERMANENT/CONTRACTOR)

INVENTOR: (LEGAL NAMES)	LAST (SURNAME)	FIRST	MIDDLE	SOCIAL SECURITY	IMMEDIATE SUPVR.

HOME ADDRESS:	STREET	CITY	STATE	ZIP	E-MAIL ID

CITIZENSHIP (I.E. U.S., GERMANY, ETC.)	DEPT. NO.	OFC. PHONE	PAGER	LOC. CODE	MAIL STOP	SHIFT	EMPLOYEE STATUS (PERMANENT/CONTRACTOR)

INVENTOR'S SIGNATURES:

INVENTOR'S FULL SIGNATURE	DATE
Edgar Herbert Callaway III	23 April 1999

INVENTOR'S FULL SIGNATURE	DATE

INVENTOR'S FULL SIGNATURE	DATE

WITNESSES' NAMES AND SIGNATURES:

THE WITNESSES, IN SIGNING THIS FORM, ATTEST TO THE FACT THAT THEY UNDERSTAND THE INVENTION.

WITNESS'S FIRST/LAST NAME (TYPE)	PHONE
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WITNESS'S FULL SIGNATURE	DATE
KEITH JACKOSKI	X3430

WITNESS'S FIRST/LAST NAME (TYPE)	PHONE
	4/23/99

WITNESS'S FULL SIGNATURE	DATE
Keith Jackoski	4/23/99

NOTE: BEFORE SUBMITTING, ALL BLANKS MUST BE COMPLETED AND ALL ADDITIONAL SHEETS MUST BE SIGNED, DATED, AND WITNESSED BY *ALL* INVENTORS AND TWO WITNESSES.

5. What problem is solved by this invention?

Wireless Information Tablets, such as the wireless web browsers WebPAD (Fig. 2; http://www.cyrix.com/html/emerging/webpad/wp_bkgrd.htm), WebMan (Fig. 3; http://www.anigma.com/webman.html), and Qubit (Fig. 4; http://www.qubit.net), and the wireless electronic book under development by Nokia and SoftBook Press (http://www.softbookpress.com/softbook_sys/softbook.html), may be used in multiple orientations relative to the body. The tablet may be oriented in the so-called landscape format (short display side vertical), as one might do while web browsing or viewing slides, and then rotated to the so-called portrait format (long display side vertical), as one might do while reading email or an electronic book. For maximum reading flexibility, the non-wireless Rocket eBook electronic book from NuvoMedia allows the user to rotate the image in steps of ninety degrees so that, for example, the same side of the tablet may be held in either hand while reading (Fig. 5; http://www.rocket-ebook.com/Products/Tour/index.html). Since antenna performance is greatly dependent on the antenna's physical relationship with the body, achieving consistent antenna performance under these conditions is difficult: No matter where the antenna is placed, it may end up under the user's hands, or pressed against the body, resulting in poor antenna performance.

One conventional approach to this problem is the use of antenna diversity -- choosing the best signal, or combination of signals, received from multiple antennas. One of the difficulties with this approach in portable products, getting enough space inside the product for the extra antennas, is less of a concern with wireless information tablets, due to their relatively large size. However, diversity also requires additional power for the duplicate receiver signal paths required, and this is very difficult to supply without significantly affecting product battery life. There is also additional signal quality estimation that must be performed on the signal from each antenna, and the question of how to choose the proper transmit antenna. For these reasons antenna diversity is not a promising solution to this problem.

One is thus forced to accept either a reduction in wireless performance for some orientations, or the elimination of a feature users have come to expect -- the ability to orient the tablet in the most ergonomically pleasing way at any time.

What is desired is an antenna system that allows the user to orient the tablet relative to the body in any way desired, with consistent radiation performance.

7. What is the invention?

The invention is an antenna system consisting of four antennas, one on each side of the tablet (Fig. 1), and an RF switch connecting the four antennas to the wireless transceiver and controlled by a signal from the tablet controller such that the active antenna is always located at the top of the display. The antenna at the top of the display is least likely to be covered by the user's hands, and most likely to be away from the user's body.

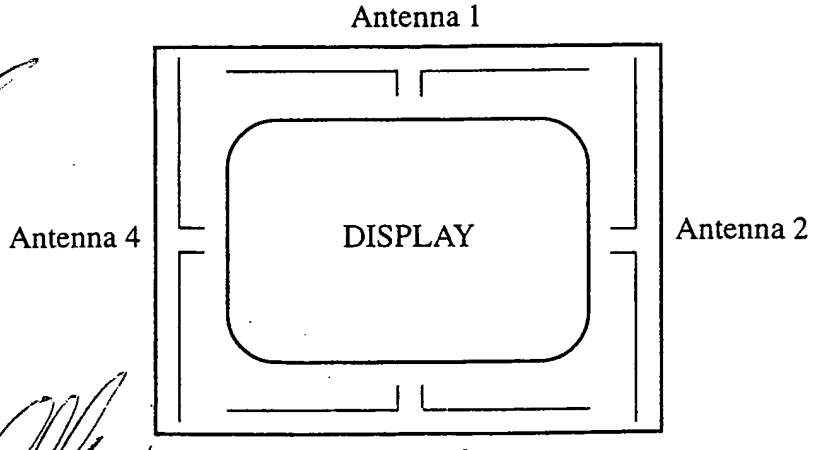

Fig. 1: Location of antennas in disclosed invention.

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The tablet controller couples antenna switching to display orientation. Display orientation is, in turn, controlled by the user, either directly by special command (as in the Rocket eBook) or indirectly by the type of material displayed (web pages or text).

A block diagram of the disclosed invention is shown in Fig. 6.

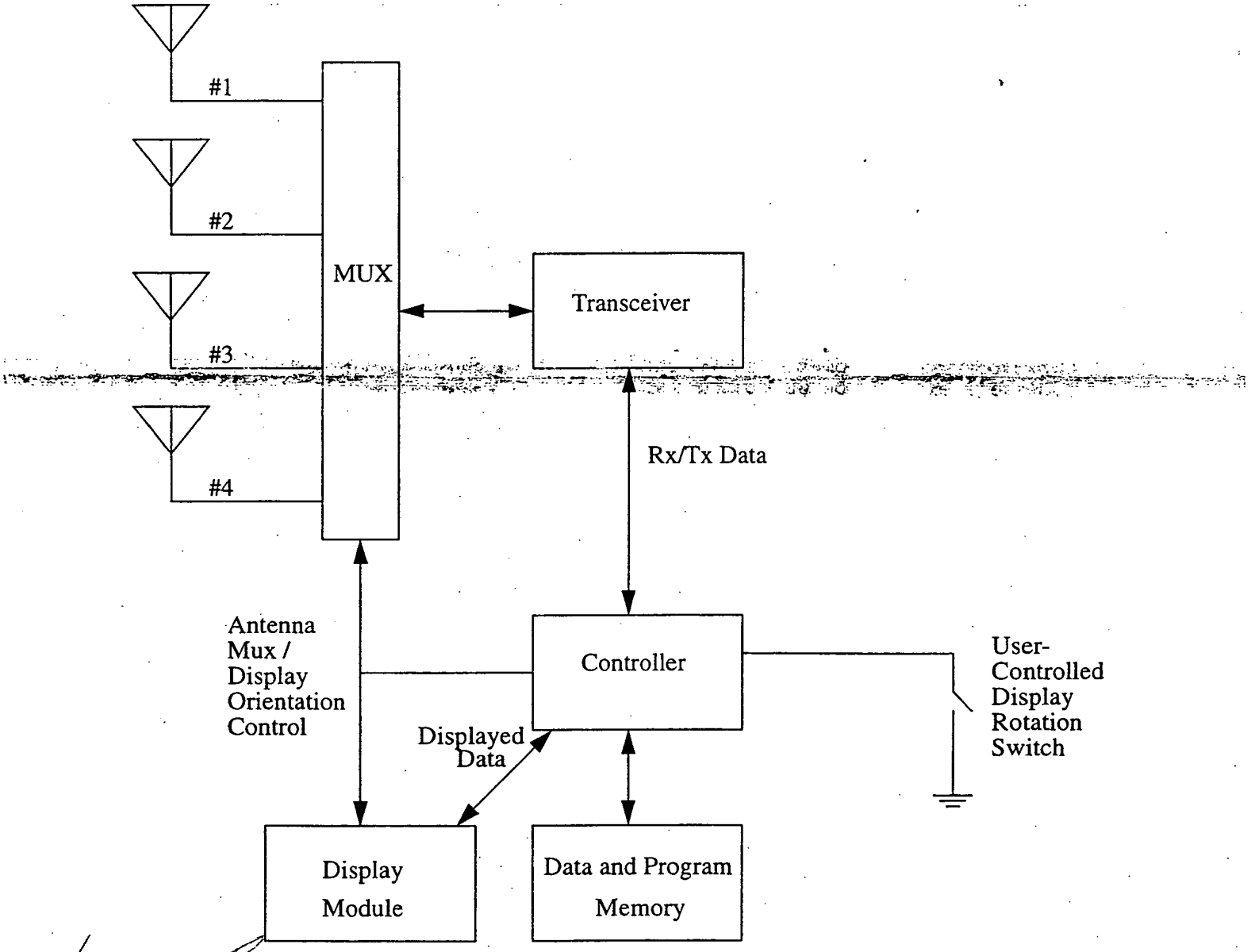

Fig. 6.

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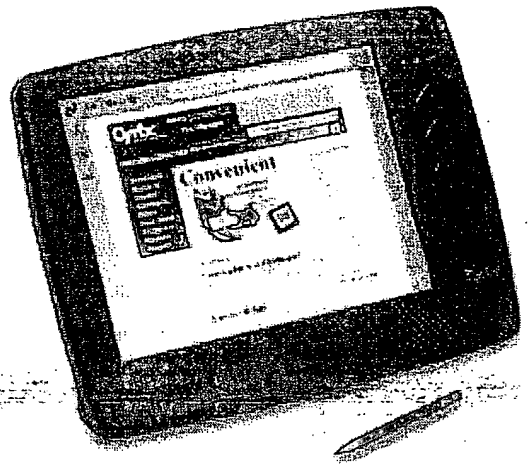
Cyrix Emerging Solutions

The Portable, Instant Internet

The Cyrix Conceptual Products Group has designed the WebPAD™ solution as a reference platform for developers and OEMs. WebPAD is not available as a retail product at this time.



Ever think about using the Internet "on the fly" to look up information, or send a quick e-mail? How many times have you not gone online because of the inconvenience of sitting down at your PC, turning it on, waiting for it to boot, clicking on an ISP icon, and waiting again for your modem to dial in and connect?

But imagine simply picking up a device the size of a clipboard, switching it on, and being instantly online from the comfort of your couch, kitchen table or backyard lounge chair. What if you could access the Internet when you wanted, where you wanted, without using a PC or an appliance that competes with your TV program?

By this time next year, you'll have a portable Internet access device - developed from a product idea brought to you by Cyrix.

A Powerful Concept for Portable Access
National Semiconductor's Cyrix Conceptual Products Group (CCPG) has developed the WebPAD™ reference design, a working prototype for a powerful, convenient Internet access device that can make Web browsing as easy as using the telephone.

The WebPAD will allow you to tap into the vast universe of information available on the Internet, wherever you are in and around the house. For example, if you're in the kitchen, use the WebPAD to find a great dinner recipe online in minutes. If you're working on your car and need to know the answer to a diagnostic problem, get online with WebPAD right in your garage. If you're watching baseball and want to compare stats or find out more about the team, WebPAD can connect you to the Internet - quickly and conveniently.

WebPAD isn't designed to replace conventional PCs as a productivity tool. Rather, it complements the PC as a single-application device, making it more convenient for Internet users to send or receive e-mail, chat, or browse Web sites instantly. It's portability and ease of use delivers the ultimate Internet experience.

Design Features for Single Application Use
Cyrix is providing the WebPAD reference design to consumer electronic original equipment manufacturers (OEMs). OEMs can use the design specifications to develop their own Internet access devices with a variety

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Fig. 2.

of features and connection options..

While Cyrix is not manufacturing the WebPAD, the Company designed the device around its highly integrated MediaGX™ processor. The MediaGX CPU represents intelligent processor integration, delivering powerful, easy-to-use multimedia technology that enables the development of low-cost information devices - like WebPAD.

The WebPAD employs sophisticated wireless (radio frequency) data transmission technology to make it a truly mobile device, providing convenience similar to that of a cordless telephone. An 8-by-11 inch , 2.7 pound tablet, the WebPAD features an LCD touchscreen supporting high-resolution graphics. Additionally, it comes with a stylus, enabling users to navigate the Web using the WebPAD's touchscreen technology.

The WebPAD is completely integrated and sealed: There are no internal parts that can be upgraded, added or removed, and there is no software to load. It's designed with dual Universal System Bus (USB) ports to add peripheral options such as a keyboard, mouse, printer or gaming input device. There are no disk or floppy drives, and no PC Card slots -- although the design would support these items if an OEM chose to feature them.

The WebPAD reference design includes three components: The WebPAD mobile display tablet, the charging unit, and a base station transceiver that can be plugged into any power outlet near an RJ-11 telephone jack. Depending upon how OEMs choose to design it, it could use a coaxial cable Internet connection as well. The design can support xDSL and ISDN as well as cable and legacy 56K interconnect protocols, and it is Ethernet network ready. Eventually, pending availability of such services, "persistent" or instant-on service similar to cable television will be available, enabling users to pick up WebPAD and turn it on with instant, no dial-up access.

The transceiver base station, which delivers the Internet data via RF signals to the hand-held WebPAD unit, can be tucked out of sight or placed among other home entertainment system components. The charging unit is an inconspicuous desktop cradle similar to those that come with cordless telephones.

The WebPAD is designed to carry a charge for up to six hours, with 20 hours of standby (out of cradle) power. It has a range of up to 500 feet from the base station, allowing freedom of mobility throughout a house, office, or even the immediate neighborhood. It will provide the Internet access of a PC in a product as portable and easy to use as a cordless phone.

Making Information Access Available

There are still variables that will determine when such a device will find favor in a vast numbers of homes and offices around the U.S. For example, one factor in mass-market acceptance of WebPAD devices is the maturation of the telcom and datacom industry infrastructures to support persistent Internet connections.

But with the acceptance of devices such as the VCR, the cellular telephone and compact disc/DVD players, the industry won't be far behind in providing the technology infrastructure necessary to make WebPAD a reality. And in time, these and other technological improvements will likely bring the cost of WebPAD devices into a comfortable price range for consumers. Similarly, Internet services are very likely to evolve into either cable- or telephone-based access standards that will make persistent Internet connections possible.

The WebPAD's innovative design provides consumer electronic OEMs an opportunity to change the paradigm of Internet access -- from the PC-based model to one based on Internet access devices. The new paradigm promises Internet access as easy to use as the telephone - bringing information to people, anytime, anywhere.

Fig. 2 (continued).

Anigma Inc.

Home
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Anigma WebMan
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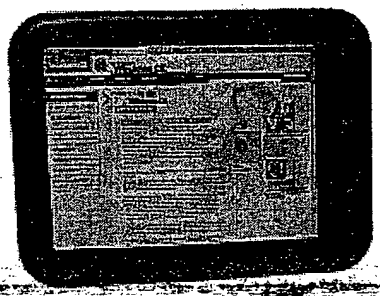
Anigma WebMan®

Browsing the Web will never be the same!

Anigma Inc. presents the Anigma WebMan® Internet access device. The first Microsoft® Windows® CE device designed specifically to access the Internet with speed and comfort.



- Ultra Portable Internet access device
- Wireless, High-Bandwidth Connectivity
- Light Weight
- Industry Leading Spyglass® Device Mosaic Browser
- 12.1" SVGA Active Matrix LCD Touch Screen
- Long Battery Life
- Microsoft® Windows® CE

Size: 10" x 13.5" x 1"
Weight: less than 3 lbs.

Affordable

The lowest cost access to the Internet of any product in its class.

Portable

Completely wireless. No power or phone cords to get tangled in. No bulky keyboard or clumsy mouse to worry about. Navigate the Web with a touch of a finger or enter a URL using the touch screen keyboard.

Comfortable

The Anigma WebMan® was designed with one thing in mind. To transform Web surfing from an uncomfortable "lean forward" activity into a comfortable "lean back" activity. More like watching television than working on a computer.

Easy to Read Touch Display

The WebMan's 12.1" SVGA active matrix display is easy on the eyes, even in low light.

High Bandwidth

The Anigma WebMan® is capable of receiving data at rates up to one million bits per second. That's fast enough to accommodate 56K, ISDN, DSL and even Cable Modem connections to the Internet.

We would appreciate your feedback on this product. Please send comments to webman.comments@anigma.com. For sales inquiries please contact webman.sales@anigma.com.

Home | About Anigma | Design Services | Anigma WebMan® | Contact Us

Fig. 3.

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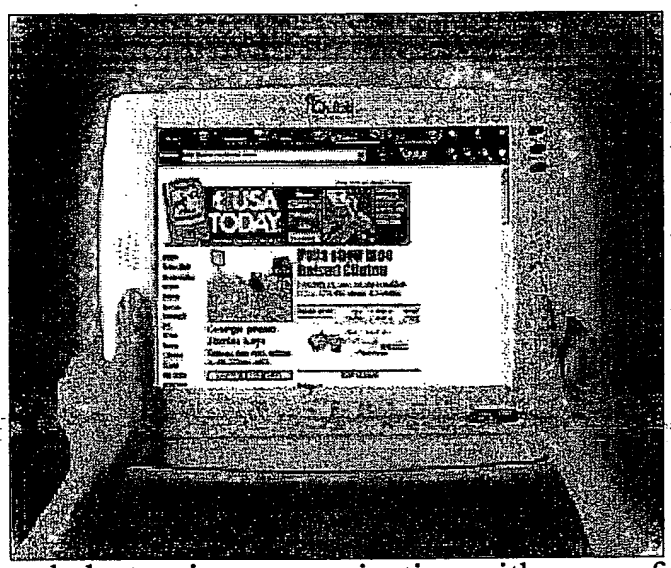
Qubit technology

The Internet. Unplugged.

Someday soon you'll wake up and the world will seem different.

A bit more accessible . . . less unpredictable. You'll feel connected.



Qubit represents a monumental shift in the way consumers will share in the information explosion on the Internet.. What was once extremely complex becomes very simple. What was once error-plagued becomes solidly reliable. What was once anchored to a table or desktop becomes completely portable.

The first information appliance truly worthy of the name.

Qubit delivers the full, rich experience of Internet exploration and electronic communication with none of the technical or convenience barriers associated with personal computers. With Qubit any type of embedded portal or browser like America Online and @Home can be accessed, including Java-based applets, along with basic applications such as e-mail and address/phone books. The Qubit has no moving parts, full multimedia capacity, and a touch-controlled, high-resolution color tablet.

Installation is remarkably simple. Just plug Qubit's cradle into an outlet and a phone or cable jack. Everything else is handled automatically through interaction with a remote service provider/content aggregator. Qubit is already configured to handle all types of Internet connections, including 56K, DSL, and cable modems.

Roughly the size and shape of a magazine, Qubit represents the last word in physical freedom for Internet users at home. Its wireless capability lets people go online anywhere in the house and operate in complete comfort. For applications that require typing, a wireless keyboard with a remote infrared link is provided.

Qubit has been designed with all the reliability and durability expected of any household appliance. It's as dependable and convenient as a cordless phone and receives any required software maintenance automatically and remotely. A household simply hooks it up, turns it on, and takes it for granted. Qubit is always on, always ready.

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Fig. 4.

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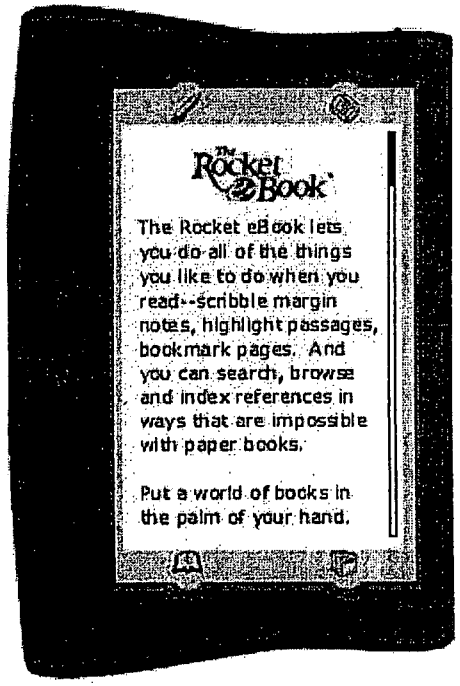
Explore the Features of the Rocket eBook

Reading is personal. Everyone has their own preferences, from the type of reading material they choose to how they like to hold their books. Reading on your Rocket eBook™ is no different, because you can adjust it to match your own preferences - like the size of the text, and how the pages are oriented - so you're sure to have a relaxing and enjoyable reading experience.



(Actual size is 5" x 7½" x 1½)

The Rocket eBook is packed with features that are both powerful and easy to use.

Book icon
Underline passages, change text size, add notes, find specific text, set bookmarks, and look up words from the built-in *Random House Dictionary*.

Bookshelf icon
Display the list of books on your Rocket eBook bookshelf. Touch any book to open it. You can also get more information about your Rocket eBook by touching Accessories and About Rocket eBook.

Shortcut icon
Create custom shortcuts on your Rocket eBook. The preprogrammed shortcut changes font size. A rocket image in the menu indicates the programmed shortcut.

Page Orientation icon
Change the page orientation by touching one of the four directional arrows. If your touch-screen is not responding properly, the bulls-eye in the center lets you realign the screen.

Page Forward/Back
Scrolls text to next page or previous page.

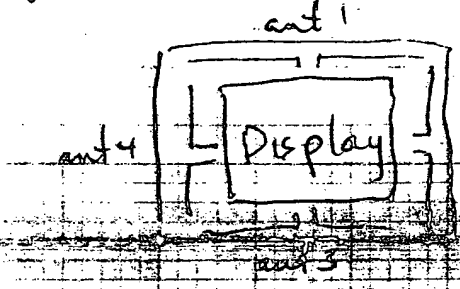
Touchscreen
The Rocket eBook's touch-sensitive digitized screen is the best available screen for reading text on a portable device. Use your finger to touch the icons and links, or use the stylus, stored in the back of the Rocket eBook spine. The hybrid-technology monochrome display has an exceptionally wide viewing angle, extremely high contrast in all light conditions, a stunning white backlight, and surprisingly low power consumption. The screen is 3-1/2" X 5-1/2" with resolution of approximately 106 dots per inch.

Page Navigation Bar
Skip through your title easily and quickly. Touch the bar and it displays the location of your current page as a percentage of the total length of the title. It also displays the location you want to skip to.

MOTOROLA ENGINEERING LOG SHEET PAGE 1 OF 1 PAGES No. 355257

TITLE	MODEL
Antenna For Wireless Web Browser / electronic Book	

For aesthetic reasons, an internal antenna is required for a wireless Web Browser and/or electronic Book. However, due to the size of the display, the antenna must be placed along an edge of the product.



The user expects proper operation no matter how the unit is held - that is, the unit must work with any side facing up, away from the body. The Nuvo Media Rocket eBook, for example, allows the user to position any side up, with just a touch of the screen. Thus there must be four antennas in the device, one on each side. While a complicated diversity scheme may be employed using the four antennas (and may even offer superior link margin, at a significant hardware cost), a simpler approach would be to coordinate the antenna selection such that the active antenna is the one at the top of the display (and away from the body).

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Keith Jadzinski 4/26/99

WRITER	DATE	WITNESS	DATE
[illegible]	12 Jan 1999	[illegible]	1/13/99